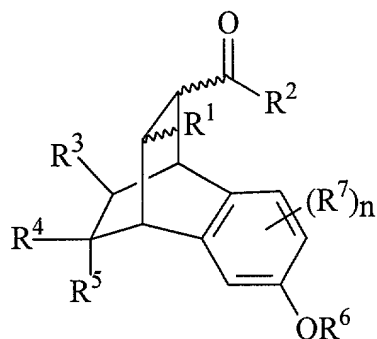


# CLAIMS

What is claimed is:

1. A compound of formula (I)



(I)

and optical isomers, diastereomers, enantiomers and pharmaceutically acceptable salts thereof in isolation or mixture, where, independently at each location:

$R^1$  is selected from the following six formulae:


$R^2$  is  $-OR^9$  or  $-NR^9R^9$ ;

$R^3$  is selected from hydrogen, halogen, hydroxyl or protected hydroxyl, amino or protected amino, and  $C_1$ - $C_8$ alkyl or  $C_1$ - $C_8$ haloalkyl;

$R^4$  and  $R^5$  are independently selected from  $R^9$ ,  $-OR^9$ ,  $-NR^9R^9$  and  $-N=N-R^9$ , or  $R^4$  and  $R^5$  may together form a group selected from  $=O$ ,  $=CR^8R^8$  and  $=NR^{10}$ , or  $R^4$  and  $R^5$  may together with the carbon to which they are both attached form a spiro carbocyclic or heterocyclic ring;

$R^6$  is selected from hydrogen, inorganic groups having 1-8 atoms selected from boron, sulfur, phosphorous, silicon and hydrogen, and organic groups having 1-20 carbons and optionally containing 1-4 heteroatoms selected from nitrogen, oxygen and silicon;

$R^7$  is selected from halogen, hydroxyl or protected hydroxyl, amino or protected amino, and  $C_1$ - $C_8$ alkyl or  $C_1$ - $C_8$ haloalkyl;

$R^8$  is selected from hydrogen, alkyl, aryl and heteroalkyl;

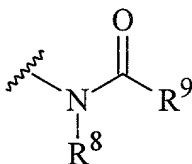
$R^9$  is selected from hydrogen and organic groups having 1-30 carbons and optionally containing 1-4 heteroatoms selected from nitrogen, oxygen and silicon, with the provision that two  $R^9$  groups both joined to a common atom may be joined together so as to form a ring with the common atom;

$R^{10}$  is selected from  $-R^9$ ,  $-OR^9$ ,  $-NR^9R^9$ ,  $-NH-C(O)R^9$ ;  $-NH-C(O)OR^9$  and  $-NH-C(S)NHR^9$ ; and

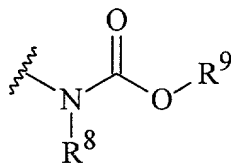
$n$  is 0, 1, 2 or 3;

with the proviso that when  $R^6$  is hydrogen and  $R^4$  and  $R^5$  together form  $=O$  and  $R^1$  is  $CO_2R^9$ , then  $R^2$  is not  $OCH_3$ .

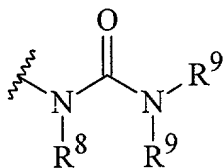
2. A compound of claim 1 wherein  $R^1$  is



3. A compound of claim 1 wherein  $R^1$  is



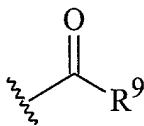
4. A compound of claim 1 wherein R<sup>1</sup> is



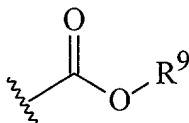
5. A compound of claim 1 wherein R<sup>8</sup> is selected from hydrogen and C<sub>1</sub>-C<sub>8</sub> alkyl.

6. A compound of claim 5 where R<sup>8</sup> is hydrogen.

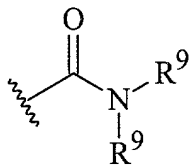
7. A compound of claim 1 wherein R<sup>1</sup> is



8. A compound of claim 1 wherein R<sup>1</sup> is

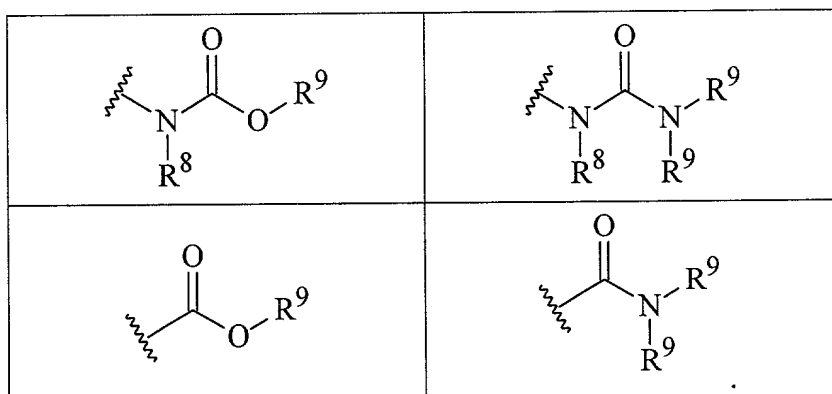


9. A compound of claim 1 wherein R<sup>1</sup> is



10. A compound of claim 1 wherein  $R^1$  is selected from the following four

formulae:



11. A compound of claim 1 wherein  $R^9$  is independently selected at each occurrence from hydrogen,  $R^{11}$ ,  $R^{12}$ ,  $R^{13}$ ,  $R^{14}$  and  $R^{15}$  where  $R^{11}$  is selected from alkyl, heteroalkyl, aryl and heteroaryl;  $R^{12}$  is selected from  $(R^{11})_p$ -alkylene,  $(R^{11})_p$ -heteroalkylene,  $(R^{11})_p$ -arylene and  $(R^{11})_p$ -heteroarylene;  $R^{13}$  is selected from  $(R^{12})_p$ -alkylene,  $(R^{12})_p$ -heteroalkylene,  $(R^{12})_p$ -arylene, and  $(R^{12})_p$ -heteroarylene;  $R^{14}$  is selected from  $(R^{13})_p$ -alkylene,  $(R^{13})_p$ -heteroalkylene,  $(R^{13})_p$ -arylene, and  $(R^{13})_p$ -heteroarylene;  $R^{15}$  is selected from  $(R^{14})_p$ -alkylene,  $(R^{14})_p$ -heteroalkylene,  $(R^{14})_p$ -arylene, and  $(R^{14})_p$ -heteroarylene, and  $p$  is selected from 0, 1, 2, 3, 4 and 5, with the provision that two  $R^9$  groups both joined to a common atom may be joined together so as to form a ring with the common atom.

12. A compound of claim 1 wherein  $R^9$  is independently selected at each occurrence from  $R^{11}$ ,  $R^{12}$ ,  $R^{13}$ ,  $R^{14}$  and  $R^{15}$  where  $R^{11}$  is selected from alkyl, heteroalkyl, aryl and heteroaryl;  $R^{12}$  is selected from  $(R^{11})_p$ -alkylene,  $(R^{11})_p$ -heteroalkylene,  $(R^{11})_p$ -arylene and  $(R^{11})_p$ -heteroarylene;  $R^{13}$  is selected from  $(R^{12})_p$ -alkylene,  $(R^{12})_p$ -heteroalkylene,  $(R^{12})_p$ -arylene, and  $(R^{12})_p$ -heteroarylene;  $R^{14}$  is selected from  $(R^{13})_p$ -alkylene,  $(R^{13})_p$ -heteroalkylene,  $(R^{13})_p$ -arylene, and  $(R^{13})_p$ -heteroarylene;  $R^{15}$  is selected from  $(R^{14})_p$ -alkylene,  $(R^{14})_p$ -heteroalkylene,  $(R^{14})_p$ -arylene, and  $(R^{14})_p$ -heteroarylene, and  $p$  is selected from 0, 1, 2, 3, 4 and 5.

13. A compound of claim 11 wherein  $R^9$  is selected from hydrogen, heteroalkyl,  $C_1$ - $C_{15}$ alkyl, (heteroaryl) $C_1$ - $C_{15}$ alkylene,  $(C_6-C_{10}aryl)C_1$ - $C_{15}$ alkylene,  $C_6$ - $C_{10}aryl$  fused to  $C_1$ - $C_{15}$ alkylene,  $(alkyl)_p(C_6-C_{10}arylene)C_1$ - $C_{15}$ alkylene,  $(C_6-C_{10}aryl)(C_6-C_{10}arylene)C_1$ - $C_{15}$ alkylene,  $(C_1-C_{15}alkyl)_p(heteroarylene)C_1$ - $C_{15}$ alkylene, and  $(heteroalkyl)_p(C_6-C_{10}arylene)C_1$ - $C_{15}$ alkylene, or two  $R^9$  groups bonded to a common nitrogen of  $R^1$  may be joined together to form a 5-8 membered heterocycle including the common nitrogen, where this 5-8 membered heterocycle may be substituted with 0-5 groups selected from alkyl and heteralkyl, where p is selected from 1, 2, 3, 4 and 5.

14. A compound of claim 11 wherein  $R^9$  is selected from hydrogen, heteroalkyl,  $C_1$ - $C_{15}$ alkyl,  $(C_6-C_{10}aryl)C_1$ - $C_{15}$ alkylene, (heteroaryl) $C_1$ - $C_{15}$ alkylene, and  $(heteroalkyl)_p(C_6-C_{10}arylene)C_1$ - $C_{15}$ alkylene, or the two  $R^9$  groups joined to a common nitrogen of  $R^1$  may be joined together to form a 5-8 membered heterocycle including the common nitrogen.

15. A compound of claim 11 wherein  $R^9$  is selected from heteroalkyl,  $C_1$ - $C_{15}$ alkyl,  $(C_6-C_{10}aryl)C_1$ - $C_{15}$ alkylene,  $(C_6-C_{10}aryl)(C_6-C_{10}arylene)C_1$ - $C_{15}$ alkylene,  $(C_1-C_{15}alkyl)_p(heteroarylene)C_1$ - $C_{15}$ alkylene, and  $C_6$ - $C_{10}aryl$  fused to  $C_1$ - $C_{15}$ alkylene.

16. A compound of claim 11 wherein  $R^9$  is selected from hydrogen, heteroalkyl,  $C_1$ - $C_{15}$ alkyl,  $(C_6-C_{10}aryl)C_1$ - $C_{15}$ alkylene,  $(C_6-C_{10}aryl)(C_6-C_{10}arylene)C_1$ - $C_{15}$ alkylene,  $(C_1-C_{15}alkyl)_p(heteroarylene)C_1$ - $C_{15}$ alkylene, and  $C_6$ - $C_{10}aryl$  fused to  $C_1$ - $C_{15}$ alkylene.

17. A compound of claim 11 wherein  $R^9$  is selected from hydrogen, heteroalkyl,  $C_1$ - $C_{15}$ alkyl, (heteroaryl) $C_1$ - $C_{15}$ alkylene, and  $(heteroalkyl)_p(C_6-C_{10}arylene)C_1$ - $C_{15}$ alkylene.

18. A compound of claim 11 wherein  $R^9$  is selected from hydrogen, heteroalkyl,  $C_1$ - $C_{15}$ alkyl, (heteroaryl) $C_1$ - $C_{15}$ alkylene,  $(C_6-C_{10}aryl)C_1$ - $C_{15}$ alkylene,  $(alkyl)_p(C_6-C_{10}arylene)C_1$ - $C_{15}$ alkylene, or the two  $R^9$  groups of  $R^1$  may be joined together to form a 5-8

membered heterocycle including the common nitrogen, where this 5-8 membered heterocycle may be substituted with 0-5 groups selected from alkyl and heteralkyl.

19. A compound of claim 1 wherein  $R^2$  is  $-OR^9$ .

20. A compound of claim 1 wherein  $R^2$  is  $-NR^9R^9$ .

21. A compound of claim 1 wherein  $R^9$  of  $R^2$  is selected from hydrogen,  $R^{11}$ ,  $R^{12}$ ,  $R^{13}$ ,  $R^{14}$  and  $R^{15}$  where  $R^{11}$  is selected from alkyl, heteroalkyl, aryl and heteroaryl;  $R^{12}$  is selected from  $(R^{11})_p$ -alkylene,  $(R^{11})_p$ -heteroalkylene,  $(R^{11})_p$ -arylene and  $(R^{11})_p$ -heteroarylene;  $R^{13}$  is selected from  $(R^{12})_p$ -alkylene,  $(R^{12})_p$ -heteroalkylene,  $(R^{12})_p$ -arylene, and  $(R^{12})_p$ -heteroarylene;  $R^{14}$  is selected from  $(R^{13})_p$ -alkylene,  $(R^{13})_p$ -heteroalkylene,  $(R^{13})_p$ -arylene, and  $(R^{13})_p$ -heteroarylene;  $R^{15}$  is selected from  $(R^{14})_p$ -alkylene,  $(R^{14})_p$ -heteroalkylene,  $(R^{14})_p$ -arylene, and  $(R^{14})_p$ -heteroarylene, and  $p$  is selected from 0, 1, 2, 3, 4 and 5.

22. A compound of claim 1 wherein  $R^9$  of  $R^2$  is selected from hydrogen, heteroalkyl,  $C_1$ - $C_{15}$ alkyl,  $(C_6$ - $C_{10}$ aryl)( $C_6$ - $C_{10}$ arylene) $C_1$ - $C_{15}$ alkylene,  $(C_1$ - $C_{15}$ alkyl) $_p$ -(heteroarylene) $C_1$ - $C_{15}$ alkylene,  $(C_1$ - $C_{15}$ alkyl) $_p$ (heteroarylene)heteroalkylene, (heteroalkyl) $_p$ ( $C_6$ - $C_{10}$ arylene) $C_1$ - $C_{15}$ alkylene, and  $(C_1$ - $C_{15}$ alkyl) $_p$ ( $C_6$ - $C_{10}$ arylene)heteroalkylene.

23. A compound of claim 1 wherein  $R^2$  is  $-OR^9$  where  $R^9$  is selected from a heteroalkyl group having 1-10 carbons and 1-4 heteroatoms selected from nitrogen, oxygen, silicon and sulfur.

24. A compound of claim 1 wherein  $R^2$  is  $-NR^9R^9$  and  $R^9$  is selected from hydrogen, heteroalkyl,  $C_1$ - $C_{15}$ alkyl, (heteroaryl) $C_1$ - $C_{15}$ alkylene, (heteroalkyl) $_p$ (aryl)-heteroalkylene, (heteroalkyl) $_p$ (aryl) $C_1$ - $C_{15}$ alkylene, and  $(C_1$ - $C_{15}$ alkyl) $_p$ ( $C_6$ - $C_{10}$ arylene) $C_1$ - $C_{15}$ alkylene.

25. A compound of claim 1 wherein  $R^3$  is selected from hydrogen and alkyl.

26. A compound of claim 25 wherein  $R^3$  is hydrogen.

27. A compound of claim 1 wherein  $R^4$  and  $R^5$  are independently selected from  $R^9$ ,  $-OR^9$ ,  $-NR^9R^9$  and  $-N=N-R^9$ .

28. A compound of claim 27 wherein  $R^9$  of  $R^4$  and  $R^5$  is selected from hydrogen,  $R^{11}$ ,  $R^{12}$ ,  $R^{13}$ ,  $R^{14}$  and  $R^{15}$  where  $R^{11}$  is selected from alkyl, heteroalkyl, aryl and heteroaryl;  $R^{12}$  is selected from  $(R^{11})_p$ -alkylene,  $(R^{11})_p$ -heteroalkylene,  $(R^{11})_p$ -arylene and  $(R^{11})_p$ -heteroarylene;  $R^{13}$  is selected from  $(R^{12})_p$ -alkylene,  $(R^{12})_p$ -heteroalkylene,  $(R^{12})_p$ -arylene, and  $(R^{12})_p$ -heteroarylene;  $R^{14}$  is selected from  $(R^{13})_p$ -alkylene,  $(R^{13})_p$ -heteroalkylene,  $(R^{13})_p$ -arylene, and  $(R^{13})_p$ -heteroarylene;  $R^{15}$  is selected from  $(R^{14})_p$ -alkylene,  $(R^{14})_p$ -heteroalkylene,  $(R^{14})_p$ -arylene, and  $(R^{14})_p$ -heteroarylene, and  $p$  is selected from 0, 1, 2, 3, 4 and 5.

29. A compound of claim 27 wherein each of  $R^4$  and  $R^5$  is hydrogen.

30. A compound of claim 27 wherein at least one of  $R^4$  and  $R^5$  is selected from  $C_1$ - $C_{15}$ alkyl, heteroalkyl, and  $C_6$ - $C_{10}$ aryl.

31. A compound of claim 27 wherein one of  $R^4$  and  $R^5$  is hydrogen and the other of  $R^4$  and  $R^5$  is selected from hydrogen,  $-OR^9$ ,  $-NR^9R^9$  and  $-N=N-R^9$  where the  $R^9$  is selected from hydrogen,  $R^{11}$ ,  $R^{12}$ ,  $R^{13}$ ,  $R^{14}$  and  $R^{15}$  where  $R^{11}$  is selected from alkyl, heteroalkyl, aryl and heteroaryl;  $R^{12}$  is selected from  $(R^{11})_p$ -alkylene,  $(R^{11})_p$ -heteroalkylene,  $(R^{11})_p$ -arylene and  $(R^{11})_p$ -heteroarylene;  $R^{13}$  is selected from  $(R^{12})_p$ -alkylene,  $(R^{12})_p$ -heteroalkylene,  $(R^{12})_p$ -arylene, and  $(R^{12})_p$ -heteroarylene;  $R^{14}$  is selected from  $(R^{13})_p$ -alkylene,  $(R^{13})_p$ -heteroalkylene,  $(R^{13})_p$ -arylene, and  $(R^{13})_p$ -heteroarylene;  $R^{15}$  is selected from  $(R^{14})_p$ -alkylene,  $(R^{14})_p$ -heteroalkylene,  $(R^{14})_p$ -arylene, and  $(R^{14})_p$ -heteroarylene, and  $p$  is selected from 0, 1, 2, 3, 4 and 5.

32. A compound of claim 1 wherein  $R^4$  and  $R^5$  together form a group selected from  $=O$ ,  $=CR^8R^8$  and  $=NR^{10}$ .

33. A compound of claim 32 wherein  $R^4$  and  $R^5$  together form  $=O$ .

34. A compound of claim 32 wherein  $R^4$  and  $R^5$  together form  $=NR^{10}$  and  $R^{10}$  is  $-OR^9$  where  $R^9$  is selected from hydrogen,  $C_6-C_{10}$ aryl,  $C_1-C_8$ alkyl, heteroalkyl,  $(C_6-C_{10}aryl)heteroalkyl$ ,  $(C_6-C_{10}aryl)C_1-C_{15}alkylene$ ,  $(heteroalkyl)_p(heteroarylene)C_1-C_{15}alkylene$ ,  $(heteroalkyl)_p(C_6-C_{10}arylene)C_1-C_{15}alkylene$ , and  $(C_1-C_{15}alkyl)_p(C_6-C_{10}arylene)heteroalkylene$ .

35. A compound of claim 32 wherein  $R^4$  and  $R^5$  together form  $=NR^{10}$  and  $R^{10}$  is  $-N(R^9)(R^9)$  where  $R^9$  is selected from hydrogen,  $C_1-C_8$ alkyl, heteroalkyl,  $C_6-C_{10}aryl$ ,  $(C_6-C_{10}aryl)heteroalkylene$ ,  $(heteroalkyl)_pC_6-C_{10}arylene$ ,  $(C_1-C_{15}alkyl)_pC_6-C_{10}arylene$ ,  $(heteroalkyl)_p(C_6-C_{10}arylene)heteroalkylene$ ,  $(C_1-C_{15}alkyl)_p(C_6-C_{10}arylene)C_1-C_{15}alkylene$ , and  $(C_1-C_{15}alkyl)_p(C_6-C_{10}arylene)C_1-C_{15}heteroalkylene$ .

36. A compound of claim 32 wherein  $R^4$  and  $R^5$  together form  $=CR^8R^8$ , and one of  $R^8$  is hydrogen while the other  $R^8$  is selected from hydrogen,  $C_1-C_8$ alkyl and heteroalkyl.

37. A compound of claim 32 wherein  $R^8$  is selected from hydrogen and  $C_1-C_8$ alkyl, and  $R^{10}$  is selected from hydrogen,  $R^{11}$ ,  $R^{12}$ ,  $R^{13}$ ,  $R^{14}$  and  $R^{15}$  where  $R^{11}$  is selected from alkyl, heteroalkyl, aryl and heteroaryl;  $R^{12}$  is selected from  $(R^{11})_p$ -alkylene,  $(R^{11})_p$ -heteroalkylene,  $(R^{11})_p$ -arylene and  $(R^{11})_p$ -heteroarylene;  $R^{13}$  is selected from  $(R^{12})_p$ -alkylene,  $(R^{12})_p$ -heteroalkylene,  $(R^{12})_p$ -arylene, and  $(R^{12})_p$ -heteroarylene;  $R^{14}$  is selected from  $(R^{13})_p$ -alkylene,  $(R^{13})_p$ -heteroalkylene,  $(R^{13})_p$ -arylene, and  $(R^{13})_p$ -heteroarylene;  $R^{15}$  is selected from  $(R^{14})_p$ -alkylene,  $(R^{14})_p$ -heteroalkylene,  $(R^{14})_p$ -arylene, and  $(R^{14})_p$ -heteroarylene, and  $p$  is selected from 0, 1, 2, 3, 4 and 5.

38. A compound of claim 30 wherein  $R^8$  is hydrogen.



39. A compound of claim 28 wherein  $R^{10}$  is  $R^{11}$ .

40. A compound of claim 1 wherein  $R^4$  and  $R^5$  together with the carbon to which they are both attached form a spiro carbocyclic or heterocyclic ring.

41. A compound of claim 1 wherein  $R^6$  is selected from hydrogen,  $R^{11}$ ,  $R^{12}$ ,  $R^{13}$ ,  $R^{14}$  and  $R^{15}$  where  $R^{11}$  is selected from alkyl, heteroalkyl, aryl and heteroaryl;  $R^{12}$  is selected from  $(R^{11})_p$ -alkylene,  $(R^{11})_p$ -heteroalkylene,  $(R^{11})_p$ -arylene and  $(R^{11})_p$ -heteroarylene;  $R^{13}$  is selected from  $(R^{12})_p$ -alkylene,  $(R^{12})_p$ -heteroalkylene,  $(R^{12})_p$ -arylene, and  $(R^{12})_p$ -heteroarylene;  $R^{14}$  is selected from  $(R^{13})_p$ -alkylene,  $(R^{13})_p$ -heteroalkylene,  $(R^{13})_p$ -arylene, and  $(R^{13})_p$ -heteroarylene;  $R^{15}$  is selected from  $(R^{14})_p$ -alkylene,  $(R^{14})_p$ -heteroalkylene,  $(R^{14})_p$ -arylene, and  $(R^{14})_p$ -heteroarylene, and  $p$  is selected from 0, 1, 2, 3, 4 and 5.

42. A compound of claim 41 wherein  $R^6$  is selected from  $C_1$ - $C_{15}$ alkyl,  $C_1$ - $C_{15}$ heteroalkyl,  $(C_6$ - $C_{10}$ aryl) $C_1$ - $C_{15}$ alkylene,  $(C_6$ aryl)( $C_6$ aryl) $C_1$ - $C_{15}$ alkylene,  $(C_2$ - $C_6$ heteroaryl) $C_1$ - $C_{15}$ alkylene,  $(C_6$ - $C_{10}$ aryl) $C_1$ - $C_{15}$ heteroalkylene,  $(heteroalkyl)_p(C_6$ - $C_{10}$ arylene) $C_1$ - $C_{15}$ alkylene,  $(heteroalkyl)_p(C_2$ - $C_6$ heteroarylene) $C_1$ - $C_{15}$ alkylene, and  $(heteroalkyl)_p(C_6$ arylene)(heteroalkylene)( $C_6$ arylene) $C_1$ - $C_{15}$ alkylene.

43. A compound of claim 41 wherein  $R^6$  is hydrogen.

44. A compound of claim 1 wherein  $n$  is 0.

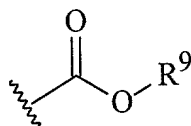
45. A compound of claim 1 wherein  $n$  is 1.

46. A compound of claim 1 wherein  $R^3$  is hydrogen;  $R^4$  and  $R^5$  are selected from (a)  $R^4$  is hydrogen and  $R^5$  is hydroxyl or protected hydroxyl and (b)  $R^4$  and  $R^5$  together form carbonyl;  $R^6$  is hydrogen; and  $n$  is 0.

47. A compound of claim 46 wherein  $R^2$  is  $-OR^9$ .

48. A compound of claim 47 wherein  $R^2$  is  $-OCH_2CH_2Si(CH_3)_3$ .

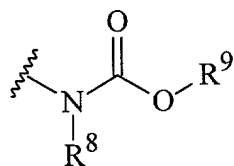
49. A compound of claim 46 wherein  $R^1$  is



50. A compound of claim 49 wherein  $R^9$  is a  $C_1$ - $C_6$  hydrocarbyl.

51. A compound of claim 50 wherein  $R^9$  is selected from n-propyl and  $-CH_2-CH=CH_2$ .

52. A compound of claim 46 wherein  $R^1$  is



53. A compound of claim 52 wherein  $R^8$  is hydrogen and  $R^9$  is  $C_1$ - $C_6$  hydrocarbyl.

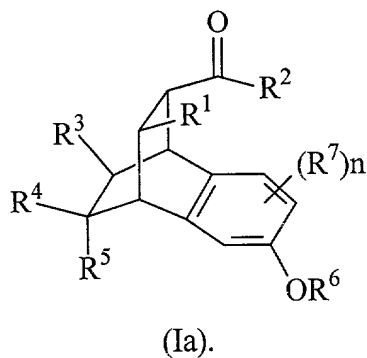
54. A compound of claim 53 wherein  $R^9$  is  $-CH_2-CH=CH_2$ .

55. 4-Hydroxy-11-oxo-tricyclo[6.2.2.0<sup>2,7</sup>]dodeca-2(7),3,5-triene-9,10-dicarboxylic acid 10-propyl ester 9-(2-trimethylsilanyl-ethyl) ester, and optical isomers, enantiomers and pharmaceutically acceptable salts thereof in isolation or mixture.

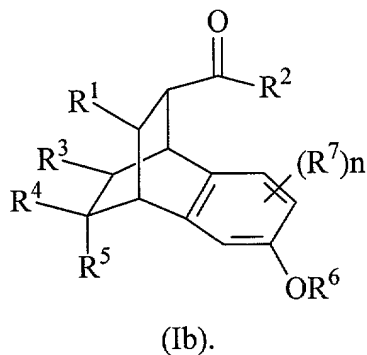
56. 4-Hydroxy-11-oxo-tricyclo[6.2.2.0<sup>2,7</sup>]dodeca-2(7),3,5-triene-9,10-dicarboxylic acid 10-allyl ester 9-(2-trimethylsilanyl-ethyl) ester, and optical isomers, enantiomers and pharmaceutically acceptable salts thereof in isolation or mixture.

57. 4,11-Dihydroxy-tricyclo[6.2.2.0<sup>2,7</sup>]dodeca-2(7),3,5-triene-9,10-dicarboxylic acid 10-propyl ester 9-(2-trimethylsilanyl-ethyl) ester and optical isomers, diastereomers, enantiomers and pharmaceutically acceptable salts thereof in isolation or mixture

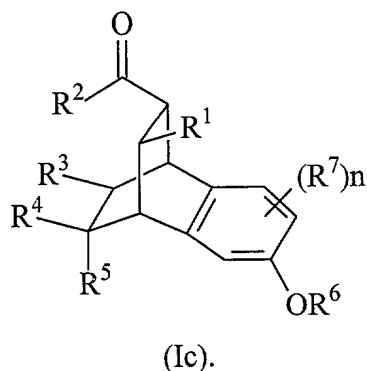
58. A compound of claim 1 wherein the stereochemistry of the R<sup>1</sup> and C(=O)R<sup>2</sup> groups being as shown in formula Ia, with R<sup>1</sup> and C(=O)R<sup>2</sup> in a *cis* arrangement, both over the benzo ring substituted with -OR<sup>6</sup>



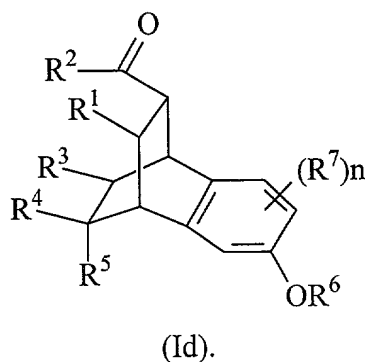
59. A compound of claim 1 wherein the stereochemistry of the R<sup>1</sup> and C(=O)R<sup>2</sup> groups being as shown in formula Ib, with R<sup>1</sup> and C(=O)R<sup>2</sup> in a *trans* arrangement, with only C(=O)R<sup>2</sup> over the benzo ring substituted with -OR<sup>6</sup>



60. A compound of claim 1 with the stereochemistry of the  $R^1$  and  $C(=O)R^2$  groups being as shown in formula Ic, with  $R^1$  and  $C(=O)R^2$  in a *trans* arrangement, with only  $R^1$  over the benzo ring substituted with  $-OR^6$



61. A compound of claim 1 with the stereochemistry of the  $R^1$  and  $C(=O)R^2$  groups being as shown in formula Id, with  $R^1$  and  $C(=O)R^2$  in a *cis* arrangement, with neither of the  $R^1$  nor  $C(=O)R^2$  groups being over the benzo ring substituted with  $-OR^6$



62. A composition comprising a compound according to claim 1 and a pharmaceutically acceptable carrier, adjuvant or incipient.

63. A method for inhibiting a  $TNF-\alpha$  mediated processes, comprising administering to a patient in need thereof, through a therapeutically or prophylactically acceptable manner, a therapeutically or pharmaceutically effective amount of a composition comprising a compound of claim 1.

64. The method according to claim 63 wherein the administering is selected from transdermal, oral, intravenous, intramuscular, vaginal, rectal, pulmonary, subcutaneous, sublingual and transmucosal administration.

65. A method for inhibiting a CXCR1 and/or CXCR2 mediated processes, comprising administering to a patient in need thereof, through a therapeutically or prophylactically acceptable manner, a therapeutically or pharmaceutically effective amount of a composition comprising a compound of claim 1.

66. The method of claim 65 wherein the method inhibits a CXCR1 mediated processes.

67. The method of claim 65 wherein the method inhibits a CXCR2 mediated processes.

68. The method according to claim 65 wherein the administering is selected from transdermal, oral, intravenous, intramuscular, vaginal, rectal, pulmonary, subcutaneous, sublingual and transmucosal administration.

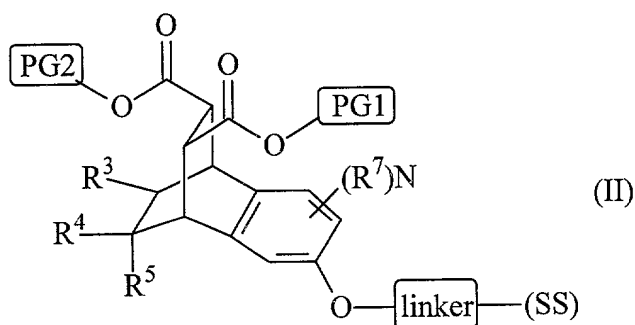
69. A method for treating an inflammation event, comprising administering to a patient in need thereof, through a therapeutically or prophylactically acceptable manner, a therapeutically or pharmaceutically effective amount of a composition comprising a compound of claim 1.

70. The method according to claim 65 wherein the administering is selected from transdermal, oral, intravenous, intramuscular, vaginal, rectal, pulmonary, subcutaneous, sublingual and transmucosal administration.

71. A library of benzobicyclooctanes where said library comprises a plurality of compounds each having a structure of formula (I) according to claim 1, where diversity is present among the  $R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ , and  $R^7$  groups.

72. A process for preparing a combinatorial library of benzobicyclooctane compounds, wherein said library comprises a plurality of compounds of formula (I) as recited in claim 1, said process comprising the steps:

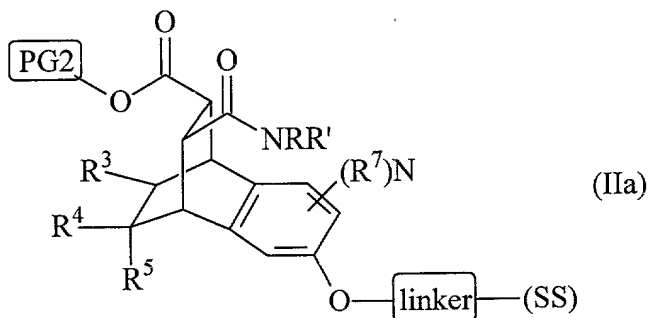
- (a) providing a compound bound to a solid support according to formula (II)



wherein PG1 and PG2 refer to first and second protecting groups, respectively, where the first protecting group can be removed in the continued presence of the second protecting group, and the second protecting group can be removed in the continued presence of the linker, and (SS) refers to a solid support;

- (b) removing the first protecting group but not the second protecting group, to provide a first deprotected product;

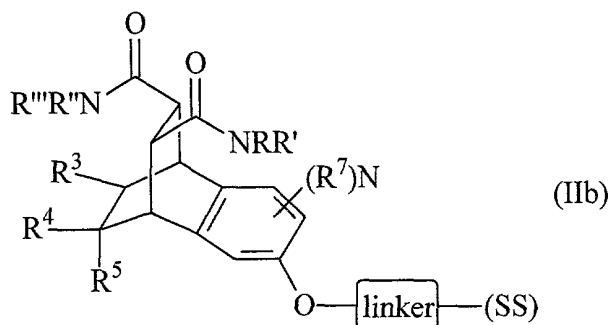
- (c) reacting the first deprotected product with a plurality of amines of the formula  $\text{HNRR}'$  to provide a plurality of compounds bound to a solid support, each according to formula (IIa)



where R and R' are each independently selected from R<sup>9</sup>;

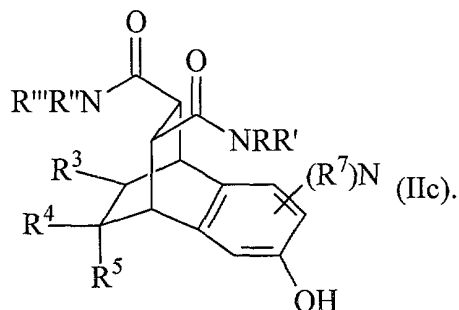
(d) removing the second protecting group from (IIa) to provide a second deprotected product;

(e) reacting the second deprotected product with a plurality of amines of the formula HNR''R''' to provide a plurality of compounds bound to a solid support, each according to formula (IIb)



where R'' and R''' are each independently selected from R<sup>9</sup>;

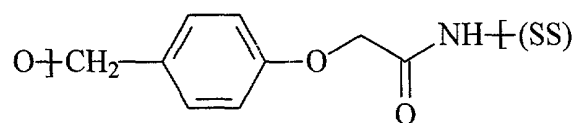
(f) removing the scaffold from the linker to provide a library of compounds according to formula (IIc)



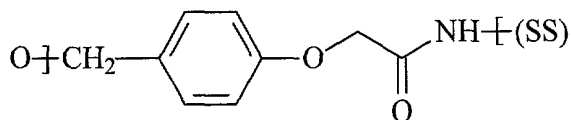
73. The process of claim 72 wherein PG1 is -CH<sub>2</sub>-CH=CH<sub>2</sub>.

74. The process of claim 72 wherein PG2 is -CH<sub>2</sub>CH<sub>2</sub>-Si(CH<sub>3</sub>)<sub>3</sub>.

75. The process of claim 72 wherein linker is



76. The process of claim 72 wherein PG1 is  $-\text{CH}_2-\text{CH}=\text{CH}_2$ ; PG2 is  $-\text{CH}_2\text{CH}_2-\text{Si}(\text{CH}_3)_3$ ; and linker is



77. The process of claim 72 wherein removing the first protecting group but not the second protecting group, to provide a first deprotected product according to step (b), is accomplished by reacting (II) with  $\text{Pd}(\text{PPh}_3)_4$  and N-methylaniline.

78. The process of claim 72 wherein removing the second protecting group from (IIa) to provide a second deprotected product according to step (d) is accomplished by treating (IIa) with tetrabutylammonium fluoride solution.

79. The process of claim 72 wherein removing the scaffold from the solid support to provide a library of compounds according to formula (IIc) is accomplished by treating (IIb) with aqueous trifluoroacetic acid.

80. The process of claim 72 wherein  $\text{R}^3$  is H,  $\text{R}^4$  and  $\text{R}^5$  collectively form  $=\text{O}$ , and n is zero.

81. A method for identifying a binding partner to a compound of claim 1, wherein the method comprises:

a. immobilizing proteins known to be involved in the TNF- $\alpha$  signaling pathway onto a suitable carrier; and



b. passing a solution of said compounds in isolation or mixture over said proteins and analyzing for compound:protein complex formation using surface plasmon resonance.

82. A method for identifying a binding partner to a compound of claim 1, wherein the method comprises:

a. providing said compound(s) bound to a solid support to provide solid phase compounds;

b. contacting a cell or cell components with said solid phase compounds in isolation or mixture; and

c. removing uncomplexed cellular material from said solid phase compounds; and

d. recovering said binding partner from said solid phase compounds.